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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,924	01/31/2001	John Cooper	1068	5313

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KEY SAFETY SYSTEMS, INC.
PATENT DEPARTMENT
7000 NINETEEN MILE ROAD
STERLING HEIGHTS, MI 48314

EXAMINER

FREJD, RUSSELL WARREN

ART UNIT	PAPER NUMBER
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2128

DATE MAILED: 03/18/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

14

Office Action Summary

Application No.

09/774,924

Applicant(s)

COOPER, JOHN

Examiner

Russell Frejd

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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Examination of Application #09/774,924

1. Claims 1-20 of application 09/774,924, filed on 31-January-2001, are presented for examination.

Claim Rejections under 35 U.S.C. § 112, 2nd Paragraph

2. Claims 1 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The language pertaining to the term *restraints* in claim 1 [line 15] and claim 14 [line 3] is indefinite, and also has no antecedent basis.

Claim Rejections under 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

- 3.1 Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Singer et al., hereinafter Singer, U.S. Patent No. 5,636,424.
- 3.2 Singer disclosed the invention as claimed, including a vehicle safety seat for reducing injury to an occupant during a vehicle crash. The vehicle safety seat includes a seat that is adapted to support an occupant, and structure interconnecting the seat and the vehicle. The interconnecting structure is adapted to constrain the seat upon vehicle deceleration, and to

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follow a trajectory with respect to the vehicle that substantially minimizes a cost function associated with occupant injury [Abstract].

3.3 In regard to claims 1 and 15, Singer [in col. 2, line 65 through col. 3, line 30] modifies a public domain vehicle crash program to incorporate seat travel and seat angle trajectories with respect to the vehicle (*the occupant restraint factor response model*);

the program, the Articulated Total Body Model, is modified to accept geometric constraints on the relative motion of one model segment (i.e. the seat) relative to another (the vehicle) (*determining a level for the occupant response based upon the model*);

during the simulation, additional non-working constraint forces and torques are applied by the adjacent segment to the segment-to-be-constrained (*the optimizer for producing the desired level of occupant response*), so that its position is forced to be along the defined constraint path (*controlling the safety restraint to produce the level of safety response*).

In regard to claims 2 and 10, Singer discloses many approaches to protecting occupants during a vehicle crash have been proposed and studied [col. 1, line 11], and also, linear functions for both mass center location and seat angle are optimized .by selecting an initial seat position, seat angle, and crash deceleration based on data from existing vehicles [col. 3, lines 19-23].

In regard to claims 3, 11,16 and 17, Singer discloses crash test simulations and the resulting test scores (i.e. cost functions) [col. 6, lines 5-49].

In regard to claims 4 –6, 8 and 12-14, Singer discloses an optimization on two levels, wherein the optimal linear functions generated in the first stage are used as starting functions for curved trajectories in a second stage of the optimization [col. 3, lines 29-31], wherein the

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optimization results in mass center and seat angle trajectories which minimize a cost function such as the total forward motion in the vehicle frame of reference of the lower body of an occupant [col. 3, lines 49-52].

In regard to claim 7, Singer discloses the use of sled crash tests to verify the simulation results [col. 6, line 40].

In regard to claim 9, the limitations of this claim were discussed in the rejection of claim 1 and in section 3.1, and are therefore considered rejected for the reasons as set forth above.

In regard to claims 18-20, the limitations of this claim were discussed in the rejection of claim 1 and in section 3.1, and are therefore considered rejected for the reasons as set forth above. Furthermore, Singer discloses sled crash tests and **computer** (emphasis added) simulations to show substantial decreases in forward motion of occupants and head injury criteria [col. 2, lines 26-29]. The examiner respectfully posits that the use of menus and displays is inherent to the use of a computer.

Response Guidelines

4. A shortened statutory period for response to this action is set to expire **3 (three) months and 0 (zero) days** from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02, 710.02(b)).

5. **Any response to the Examiner in regard to this non-final action should be**

directed to: Russell Frejd, telephone number (703) 305-4839, Monday-Friday from 0630 to 1500 ET, **or** the examiner's supervisor, Kevin Teska, telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

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mailed to: Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to: (703) 872-9306

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Date: 13-March-2004

A handwritten signature in cursive script that reads "RUSSELL FREJD". The signature is written in dark ink and is positioned above a horizontal line.

**RUSSELL FREJD
PRIMARY EXAMINER**